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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/473,650	12/29/1999	CARL R. STEVENSON	STEVENSON-8	1262

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EXAMINER

PEREZ GUTIERREZ, RAFAEL

ART UNIT

PAPER NUMBER

2686

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15

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/473,650

Applicant(s)

Stevenson

Examiner

Rafael Perez-Gutierrez

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

Art Unit: 2686

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office Action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 16, 2004 has been entered. **Claims 1-21** are still pending in the present application.

### ***Claim Objections***

2. **Claims 1, 2, and 8** are objected to because of the following informalities:

- a) On **line 11** of **claim 1** and on **line 10** of **claim 8**, replace "the" with --a-- after "with";
- and
- b) On **line 2** of **claim 2**, delete "15" before "plurality".

Appropriate correction is required.

3. **Claim 9** is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. The limitation of "a substantially stationary wireless communication

Art Unit: 2686

environment”, recited on **lines 2-4 of claim 9**, was previously recited in **line 8 of claim 8**, consequently, it fails to further limit the subject matter recited in **claim 8**.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 10-12 and 14-17** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

**Claims 10-12 and 14-17** are considered indefinite because the wireless communication environment has been defined in independent **claim 8** as a “**substantially stationary wireless communication environment**” and claims 10-12 and 14-17 further recite that the wireless communication environment is either a wireless local area network, a cordless telephone, a cordless modem, a cellular telephone, a PCS telephone, a trunked mobile radio system, and a mobile satellite communications system, each of which is **not** an example of a “substantially stationary wireless communication environment”. All of these environments recited in claims 10-12 and 14-17 are either partially or fully mobile. Clarification is respectfully requested.

***Claim Rejections - 35 USC § 102***

Art Unit: 2686

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless -- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1 and 4-7** are rejected under 35 U.S.C. 102(e) as being anticipated by **Bevan et al. (U.S. Patent # 6,489,923 B1)**, of record.

Consider **claim 1**, Bevan et al. clearly show and disclose a cellular mobile (wireless) telecommunications system (abstract) comprising:

a plurality of antennas 20, 22, 30 (figure 3) for use by one receiver (abstract, column 6 lines 57-65, and column 7 lines 8-12 and 35-39);

a scanner (inherent) adapted to sample (scan) through the plurality of antennas 20, 22, 30 and provide a signal received from each of the plurality of antennas 20, 22, 30 to the receiver (abstract and column 7 lines 8-12 and 35-39) and to impart Doppler modulation (e.g., Doppler induced bearing bias) onto a received signal, wherein one or more of the received signals from the antennas 20, 22, 30 are severely degraded (e.g., due to high level of Doppler spread, frequency shift or offset, or multipath) (abstract, figure 4, column 2 lines 6-20, column 6 lines 35-42, and column 7 lines 40-45); and

a receiver (figures 3 and 4) having direction finding means for determining the bearing of a received signal in accordance with a phase thereof (abstract, column 2 lines 6-20, column 6 lines 28-62, and column 7 lines 7-39),

Art Unit: 2686

wherein said receiver is configured to eliminate multipath channel impairments caused at least by the severely degraded signals (e.g., due to high level of Doppler spread, frequency shift or offset, or multipath) (abstract, column 1 line 65 - column 2 line 20, column 6 lines 35-42, and column 7 lines 40-45).

Consider **claims 4 and 5**, and **as applied to claim 1 above**, Bevan et al. also show and disclose that the plurality of antennas are equidistant and can be spaced equally apart around a circular array (circumference of a circle formed about a center point) (column 4 lines 44-59).

Consider **claim 6**, and **as applied to claim 1 above**, Bevan et al. further show and disclose that the plurality of antennas comprises at least three antennae 20, 22, 30 (figures 3 and 4).

Consider **claim 7**, and **as applied to claim 1 above**, Bevan et al. also disclose that the scanner (inherent) continuously scans and connects each of the plurality of antennae 20, 22, 30 in turn to the receiver for a substantially equal period of time (dwell time T) (column 7 lines 8-12).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

Art Unit: 2686

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 2 and 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bevan et al. (U.S. Patent # 6,489,923 B1)** in view of **Schuchman et al. (U.S. Patent # 6,148,195)**, both of record.

Consider **claims 2 and 3**, and **as applied to claim 1 above**, Bevan et al. clearly disclose the claimed invention except that scan rate of the scanner is at least 100 hertz or at least 2000 hertz.

In the same field of endeavor, Schuchman et al. further show and disclose that a cellular telephone (wireless) communication system, comprising, among other components, an antenna resolver 40 (scanner) (figure 11) adapted to scan through a plurality of antennas SA1-SAN and provide a signal received from each of the plurality of antennas SA1-SAN to a receiver (column 6 lines 40-55) wherein the scan rate of the antenna resolver 40 (scanner) (figure 11) for scanning each of the plurality of antennas SA1-SAN is at least 100 hertz (at least 2000 hertz for the plurality of antennas SA1-SAN) (figure 10 and column 6 lines 22-39).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the scan rate used by Schuchman et al. into the system of

Art Unit: 2686

Bevan et al. for the purpose of optimal sampling of each of the antennas 20, 22, 30.

8. **Claims 8-17, 20, and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bevan et al. (U.S. Patent # 6,489,923 B1)** in view of **Borras et al. (U.S. Patent # 5,303,240)**, and further in view of **Sole et al. (U.S. Patent # 6,150,987)**, each of which is of record.

Consider **claims 8, 9, and 13**, and as applied to **claims 1 and 7** above, Bevan et al. clearly show and disclose method for communication in a cellular mobile (wireless) telecommunications system (wireless communication environment) (abstract) comprising:

providing a common transceiver with a plurality of antennas 20, 22, 30 (figure 3, column 6 lines 57-62, and column 7 lines 8-12);

continuously scanning through the said plurality of antennas 20, 22, 30 for a substantially fixed period of time (e.g., dwell time T) by connecting each of the plurality of antennas 20, 22, 30 to a receiver configured to eliminate multipath channel impairments caused at least by severely degraded received signal samples (e.g., due to high level of Doppler spread, frequency shift or offset, or multipath) and to impart Doppler modulation (e.g., Doppler induced bearing bias) onto a received signal (abstract, figure 4, column 2 lines 6-20, column 6 lines 35-42, column 7 lines 8-12 and 35-45); and

determining the bearing of the received signal in accordance with a phase thereof (abstract, column 2 lines 6-20, column 6 lines 28-62, and column 7 lines 7-39).

However, Bevan et al. do not specifically disclose that the plurality of antennas 20, 22, 30 are operated as a phased array during a transmit mode.



Art Unit: 2686

Borras et al. clearly show and disclose a communication system for determining the direction for transmitting and receiving a signal comprising an array of phased antennas 10 (figure 2) used for receiving as well as transmitting a signal (column 2 lines 51-66 and claims 1, 4, 5, 7-9, and 12-16).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Bevan et al. with the teachings of Borras et al. in order to use the plurality of antennas as a phased array during a transmission mode. Efficient use of the system gain can be achieved by using the antennas as a phased array during a transmit mode.

However, Bevan et al. as modified by Borras et al. do not specifically disclose that the wireless communication environment is a substantially stationary wireless communication environment.

Sole et al. clearly show and disclose an antenna assembly and a method for communicating using said assembly in a substantially stationary wireless communication environment such as a wireless local loop, said method including, among other steps, the steps of scanning an antenna and finding the bearing of a received signal (abstract, column 1 line 55 - column 2 line 47, column 3 lines 40-59, and column 4 lines 17-28 and 47-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify the combined teachings of Bevan et al. and Borras et al. with the teachings of Sole et al. in order to used said method of communication in a substantially stationary wireless communication environment such as, for example, a wireless

Art Unit: 2686

local loop as taught by Sole et al.

Consider **claims 10-12 and 14-17**, and **as applied to claim 8 above**, Bevan et al. (abstract) and Borrás et al. (abstract and column 1 lines 6-9) both disclose that their teachings apply to wireless communications systems, therefore, they at least suggest that wireless communication environment can be a wireless local area network, a cordless telephone or modem, a cellular or PCS telephone, a trunked mobile radio system or a mobile satellite communications system.

Consequently, it would have been clearly obvious to a person of ordinary skill in the art at the time the invention was made to applied the teachings of Bevan et al., Borrás et al., and Sole et al. in any of the above-mentioned environments.

Consider **claims 20 and 21**, and **as applied to claim 8 above**, Bevan et al. also show and disclose that the plurality of antennas are equidistant and can be spaced equally apart around a circular array (circumference of a circle formed about a center point) (column 4 lines 44-59).

9. **Claims 18 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bevan et al. (U.S. Patent # 6,489,923 B1)** in view of **Borrás et al. (U.S. Patent # 5,303,240)**, and further in view of **Sole et al. (U.S. Patent # 6,150,987)**, **as applied to claim 8 above**, as further in view of **Schuchman et al. (U.S. Patent # 6,148,195)**, each of which is of record.

Consider **claims 18 and 19**, and **as applied to claim 8 above**, Bevan et al., as modified by Borrás et al. and Sole et al., clearly disclose the claimed invention except that scan rate of the scanner is at least 100 hertz or at least 2000 hertz.

Art Unit: 2686

In the same field of endeavor, Schuchman et al. further show and disclose that a cellular telephone (wireless) communication system, comprising, among other components, an antenna resolver 40 (scanner) (figure 11) adapted to scan through a plurality of antennas SA1-SAN and provide a signal received from each of the plurality of antennas SA1-SAN to a receiver (column 6 lines 40-55) wherein the scan rate of the antenna resolver 40 (scanner) (figure 11) for scanning each of the plurality of antennas SA1-SAN is at least 100 hertz (at least 2000 hertz for the plurality of antennas SA1-SAN) (figure 10 and column 6 lines 22-39).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the scan rate used by Schuchman et al. into the combined method of Bevan et al., Borrás et al., and Sole et al., for the purpose of optimal sampling of each of the antennas 20, 22, 30.

### ***Response to Arguments***

10. Applicant's arguments with respect to **claims 1 and 8** have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

11. Any response to this Office Action should be **faxed to (703) 872-9306 or mailed to:**

Commissioner for Patents  
P.O. Box 1450

Art Unit: 2686

Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Crystal Park II  
2021 Crystal Drive  
Arlington, VA 22202  
Sixth Floor (Receptionist)

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rafael Perez-Gutierrez whose telephone number is (703) 308-8996. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Marsha D. Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700 or call customer service at (703) 306-0377.

Art Unit: 2686

  
Rafael Perez-Gutierrez  
R.P.G./rpg **RAFAEL PEREZ-GUTIERREZ**  
**PATENT EXAMINER**

June 10, 2004